



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/674,421

10/01/2003

Gee-Sung Chae

8734.241.00 US

5657

30827

7590

10/30/2008

MCKENNA LONG & ALDRIDGE LLP
1900 K STREET, NW
WASHINGTON, DC 20006

EXAMINER

BODDIE, WILLIAM

ART UNIT

PAPER NUMBER

2629

MAIL DATE

DELIVERY MODE

10/30/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/674,421	Applicant(s) CHAE ET AL.	
	Examiner WILLIAM L. BODDIE	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/10/08.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4,10 and 11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4,10 and 11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. In an amendment dated, October 10th, 2008 the Applicant amended claims 1, 10 and cancelled claims 8-9 and 12. Currently claims 1, 4 and 10-11 are pending.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 10th, 2008 has been entered.

Response to Arguments

3. Applicant's arguments with respect to claims 1, 4 and 8-9 have been considered but are moot in view of the new ground(s) of rejection.

Response to Amendment

4. Applicant is reminded of CFR 37 1.121(c)(2) which expressly requires that any changes to the limitations of a claim are to be marked up in the appropriate manner.

5. Claim 1 contains two locations of the Applicant disregarding this rule. Specifically, "electrode and" is underlined yet was present in the previous version of the claims. Additionally, the newly added limitation concerning the make up of the passivation layer is not underlined as required.

6. Applicant is advised to consult the pertinent sections of the CFR to ensure that all future amendments comply with all of the rules set forth therein.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 1, 4 and 10-11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Specifically independent claims, 1 and 10, now require that the passivation layer be made of "an organic material including BCB (Benzo-Cyclo-Butene) **and** photoacryl" (emphasis added). The Examiner was unable to locate any previous discussion which disclosed a passivation layer composed of both BCB and photoacryl. All previous discussions were drawn to selecting a single material for the composition of the passivation layer.

As such the new limitation which requires both materials to make up the passivation layer is unsupported by the original specification.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1, 4 and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto et al. (US 6,069,678) in view of Shin et al. (US 6,356,328) and further in view of Lee (US 6,459,465).

With respect to claim 1, Sakamoto discloses, an in-plane switching mode liquid crystal display device, comprising:

a plurality of gate lines (105 in fig. 24) and data lines (205 in fig. 24) defining a plurality of pixels;

a thin film transistor (505 in fig. 24) in each of the pixels, the thin film transistor including a gate electrode (1405 in fig. 25) on a substrate (605 in fig. 25), an insulating layer (2405 in fig. 25) over the gate electrode, a semiconductor layer (1105, 2505 in fig. 25) on the insulating layer, a source electrode (1005 in fig. 25) and a drain electrode (905 in fig. 25) on the semiconductor layer;

a common line (part of 305 in fig. 24 that runs horizontally);

at least one pixel electrode (405 in fig. 24) having a predetermined width (clear from fig. 6) in each of the pixels; and

at least one common electrode (305 in fig. 24) having a predetermined width (Wcom in fig. 24) completely overlapping a data line (205 in fig. 24) in width (clear from fig. 24), the common electrode being substantially parallel to the pixel electrode (seems again clear from fig. 24) and the common electrode being alternately disposed with the pixel electrode (seems clear from fig. 24, that the common and pixel electrodes alternate);

a passivation layer (2605 in fig. 25) over the source electrode, drain electrode and semiconductor layer, and

wherein the common electrode is disposed on the passivation layer (col. 10, lines 45-46; also note fig. 26).

Sakamoto does not expressly disclose, that the common electrode is connected to the common line, on the substrate, through a contact hole.

Shin discloses, wherein a pixel electrode (16b in fig. 4) and a common electrode (15b in fig. 4) are disposed on the same layer (fig. 4), a common electrode (15b in fig. 3) and a common line (15a in fig. 3) on a substrate (col. 3, lines 13-14) are disposed on layers different from each other (col. 3, lines 6-14, 34-36) so that the common electrode is connected to the common line through a contact hole (C in fig. 3),

wherein the common electrode and the common line are not overlapped (clear from fig. 3) with a pixel electrode (16b in fig. 3) and the common line is separated a predetermined distance from the end portion of the pixel electrode (clear from fig. 3).

Shin and Sakamoto are analogous art because they are both drawn to structural components of LCD pixels.

At the time of the invention it would have been obvious to not overlap the pixel and common electrodes and to connect the common line and electrodes of Sakamoto via a contact hole as taught by Shin.

The motivation for doing so would have been to improve aperture ratio and brightness (Shin; col. 2, lines 16-22).

Neither Sakamoto nor Shin expressly disclose that the passivation layer is made of an organic material including BCB and photoacryl.

Lee discloses, a passivation layer is made of an organic material including BCB and photoacryl (col. 8, lines 43-50).

Lee, Shin and Sakamoto are analogous art because they are all from the same field of endeavor namely, LCD pixel design and manufacture.

At the time of the invention it would have been obvious to one of ordinary skill in the art to use the organic material taught by Lee to form the passivation layers of Shin and Sakamoto.

The motivation for doing so would have been the well known advantage of providing good flatness characteristics and low permittivity.

With respect to claim 4, Sakamoto, Shin and Lee disclose, the device of claim 1 (see above).

Sakamoto further discloses, wherein the data lines (905 in fig. 25/ 205 in fig. 24) are formed on the insulating layer (2405 in fig. 25).

With respect to claim 10, Sakamoto discloses, an in-plane switching mode liquid crystal display device, comprising:

a plurality of gate lines (105 in fig. 24) and data lines (205 in fig. 24) defining a plurality of pixels;

a thin film transistor (505 in fig. 24) in each pixel, the thin film transistor including a gate electrode (1405 in fig. 25) on a substrate (605 in fig. 25), an insulating layer (2405 in fig. 25) over the gate electrode, a semiconductor layer (1105, 2505 in fig. 25)

on the insulating layer, a source electrode (1005 in fig. 25) and a drain electrode (905 in fig. 25) on the semiconductor layer, and a passivation layer over the source electrode, drain electrode and semiconductor layer (2605 in fig. 25),

a common line (part of 305 in fig. 24 that runs horizontally);

at least one pixel electrode (405 in fig. 24);

a first common electrode (left electrode; 305 in figs. 24/27) completely overlapping a data line (205 in figs. 24/27) in width; and

at least one second common electrode in each pixel (center portion electrode in fig. 24), the second common electrode connected to the common line (clear from fig. 24 that the common line is connected to the common electrode),

wherein the pixel electrode has a predetermined width and is substantially parallel to the first and second common electrodes (clear from fig. 24) and the common electrode is disposed on the passivation layer (col. 10, lines 45-46; also note fig. 26), the source electrode is disposed between the first and second common electrodes and between the first common electrodes (seems clear from fig. 24 that the source electrode is so positioned).

Sakamoto does not expressly disclose, that the common electrode is connected to the common line, on the substrate.

Shin discloses, wherein a pixel electrode (16b in fig. 4) and a common electrode (15b in fig. 4) are disposed on the same layer (fig. 4), a common line (15a in fig. 3) on a substrate

wherein a common electrode (15b in fig. 3) and the common line are not overlapped (clear from fig. 3) with a pixel electrode (16b in fig. 3) and the common line is separated a predetermined distance from the end portion of the pixel electrode (clear from fig. 3).

Shin and Sakamoto are analogous art because they are both drawn to structural components of LCD pixels.

At the time of the invention it would have been obvious to not overlap the pixel and common electrodes and to connect the common line and electrodes of Sakamoto via a contact hole as taught by Shin.

The motivation for doing so would have been to improve aperture ratio and brightness (Shin; col. 2, lines 16-22).

Neither Sakamoto nor Shin expressly disclose that the passivation layer is made of an organic material including BCB and photoacryl.

Lee discloses, a passivation layer is made of an organic material including BCB and photoacryl (col. 8, lines 43-50).

Lee, Shin and Sakamoto are analogous art because they are all from the same field of endeavor namely, LCD pixel design and manufacture.

At the time of the invention it would have been obvious to one of ordinary skill in the art to use the organic material taught by Lee to form the passivation layers of Shin and Sakamoto.

The motivation for doing so would have been the well known advantage of providing good flatness characteristics and low permittivity.

With respect to claim 11, Sakamoto, Shin and Lee disclose, the device of claim 10 (see above).

Sakamoto further discloses, wherein a width of the first common electrode is larger than that of the second common electrode (clear from fig. 24).

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILLIAM L. BODDIE whose telephone number is (571)272-0666. The examiner can normally be reached on Monday through Friday, 7:30 - 4:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2629

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sumati Lefkowitz/

Supervisory Patent Examiner, Art Unit 2629

/William L Boddie/

Examiner, Art Unit 2629

10/31/08